Recycling for Development from Denmark to Guinea-Bissau

Maintenance booklet GTS 21-71

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PEOPLE TO PEOPLE

UFF-Humana & Recycling for Development

UFF-Humana aims to strengthen development and enable poor people to experience better conditions in two partner countries Guinea-Bissau and Zimbabwe. One of the ways to target areas that can contribute to sustainable development is via shipment of good quality equipment to support services such as e.g. education or health services to which poor communities often lack adequate access.

In 2021, UFF-Humana applied for and was granted funds from Recycling for Development (RfD, in Danish Genbrug til Syd) to send a container with school furniture, hospital equipment, and bicycles, among other necessary good-quality equipment to our partner organization ADPP-GB (Ajuda de Desenvolvimento de Povo para Povo) in Guinea-Bissau.

The RfD fund is managed by Danish Mission Council Development Department whose main objectives are fighting poverty and supporting sustainable development among the world's poorest countries.

Thank you to our volunteers and other partners such as Nødhjælpsdepotet in Næstved, Computer group in Holbæk, and Ballerup Boldklub among others for making this shipment possible.

GTS 21-71 shipment primarily supports these Global Sustainability Goals:

Partnership travel to Guinea-Bissau

In March 2022 UFF-Humana representatives visited partner organization ADPP-GB in Guinea-Bissau.

The main aim of this partnership travel was to investigate and work together with the local projects in finding the possibilities of maintaining and repairing the equipment that ADPP-GB received over the past years. Maintaining actions aimed to increase the longevity of the equipment from Denmark, thus lowering the possibility of unnecessary waste.

This booklet gathers observations, experiences, practice, and knowledge that was exchanged between UFF-Humana and ADPP-GB representatives to achieve a long-lasting and sustainable use of second-hand equipment from Denmark. UFF-Humana happily shares its experiences with partners, members, and other NGOs that work with the good quality equipment shipments funded by the RfD.

Inspection of the received equipment

The inspection of the received equipment showed that all the equipment is in use and is kept in good condition. Only a very small percentage of the furniture which we encountered on our visit had been put aside for reasons of damage or in need of repair. For example, at the Cacheu primary school, we found three broken folding tables and two chairs from a received batch of 40 chairs and 45 tables. ADPP Teacher Training College has similarly been storing 11 damaged chairs from the received 129 chairs and two damaged tables from the received 129 tables. Similar observations were made in other ADPP-GB projects.

The inspection of the received equipment was accompanied by the ADPP-GB projects leaders and the assigned maintenance team.

Preparations for the maintenance actions

To prepare for the maintenance actions, good tools played a big role in making the related process simpler and increasing the effectiveness of various maintenance tasks. Hence, UFF-Humana representatives brought several good-quality drilling machines that were battery-powered and with a 'hammer' feature, together with a large box of bits from Denmark. These drilling machines were given to three larger ADPP-GB projects. In addition, the maintenance team from Denmark gave workshops on how to use and maintain them.

Other important tools such as hammer, pliers, crowbar, saw, rope, and wire, among others, were bought in Guinea-Bissau. These bought tools were handy for making repairs on small furniture. It is important to note that buying different types of screws was a challenge in Guinea-Bissau. Many different maintenance shops did not have a lot of choices when it came to the size of the screws. However, the correct screws are of great importance when making repairs.

Community engagement and participation in maintenance actions

The success of the maintenance project depended largely on community engagement which helped to shape the project and built support for development ideas. Our journey started with involving and engaging local actors such as the maintenance team, project leaders, teachers, and students to participate in the maintenance actions. After gathering a strong maintenance team, talks and brainstorming sessions on repair tactics followed. The gathered maintenance team was involved in all the repair projects during the visit.

Diverse perspectives, knowledge, and experiences strengthened the effectiveness and enhanced the value of the maintenance actions. For example, local participants had a deep knowledge of their local area, as well as technical insights. UFF-Humana's maintenance team also brought their repairment experiences and knowledge. When these perspectives were shared among all parties and incorporated into the maintenance action, ADPP-GB projects benefited by gaining an extra repaired chair to sit on or an extra table to write on, thus reducing unnecessary waste.

Apart from engaging local communities in the participation, knowledge of the local language played an important role in the success of the repair actions. By being able to speak a common language, the UFF-Humana's maintenance team managed to encourage openness and get to know people faster, build trust, understand local maintenance culture better, and work effectively together.

Experiences from maintenance actions

Example 1 - how to get screws to remain in place and do their designed job, if the screw doesn't grip the wood anymore

What to do:

1. Drill two small holes to the left and right of the screw to be fixed
2. Take a piece of wire and lead it through the freshly drilled holes and place the wire over the screw to be fixed to hold the screw in place
3. Viola! You have a fixed chair that can be used again. The same technique can be applied to similar problems on other items


Bissau, 07 de Março de 2022
Disciplina: Matemática
Tema: Leitura da tabuada.


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Example 2 - Fixing a folding table where the metal support of the leg is broken

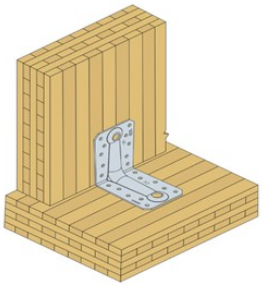
What to do:

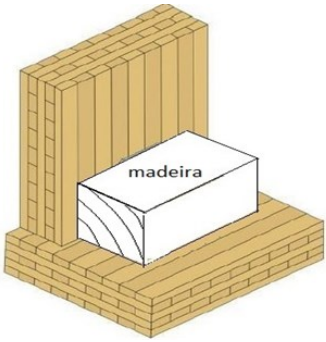
1. Locate a place beside the broken screws to fix a new metal support
2. Find some metal, maybe a cola tin. Open it up and fold the tin strip until it is strong enough
3. Drill four holes, one in each corner of the newly created metal support

If you have an old bed, chair or table with a weak structure, you have several solutions to strengthen the structure again

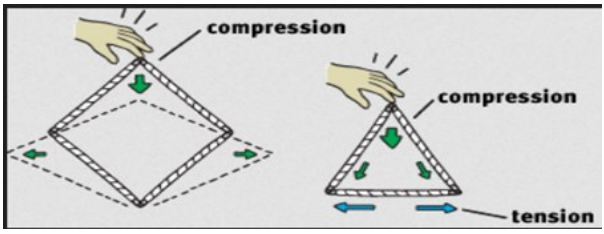
How?

1. Refit all joints of the structure and maybe strengthen the joints with an extra screw
2. Find a metal angle bracket and fix the metal bracket with screws on all weak joints of your unstable structure. One can use old metal plates/strips, bend them to an angle and drill some screw holes into the metal. If the metal plate is too weak, fold the metal strip several times until it seems to be strong enough to hold the bending forces on the specific joints they are getting applied to
3. Another way is to cut a piece of wood and fit it inside the corner with some screws and wood glue to fix it well
4. Reinforce a weak structure with a triangle. Meaning: add an extra piece of wood to a weak square structure





*A triangle will keep its shape even when forces are applied to it from any direction. A force on a triangle is spread around the shape as compression (pushing forces) and tension (pulling forces), and these forces are balanced. In comparison, a force on a square or other shapes with more sides can change shapes by collapsing the corners.



Example 3 - office chairs with wheels

Some of the office chairs with wheels were placed in the storeroom due to missing/ broken wheels. After a discussion session, the maintenance team decided to remove wheels from some chairs and use them to the other chairs with missing wheels. As a result, two types of office chairs were back in function - some with wheels and some without.

The settings of an electric drill and their application

Rotational Selector (1+2). The selector switch is commonly found above a **driver's trigger (3)**. The switch generally has three positions to control the direction of bit rotation.

- To the user's left **(2)** is clockwise rotation which results in forwarding driving or tightening.
- The user's right position **(1)** is counter-clockwise rotation which results in reverse driving and loosening.

The Trigger (3). The trigger controls the speed of rotation. The magnitude of trigger pressure is proportional to the speed of rotation.

The Battery. Batteries are removable. To remove the battery, locate the battery release button **(4)**.

The top slider (5) and the drill settings (6)

The top slider **(5)** has 2 settings. Setting number 1 is used for slow and powerful drilling/ screwing (long or big screws that need force to be driven into the material such as metal, ceramic, or glass). Setting number 2 is weaker and you use this setting for fast drilling/ screwing.

The ring with the numbers and the screw sign **(6)** can be turned. Here you can apply the strength (torque) with which you want to fasten a screw. From the lowest setting 1 until the highest setting 15.

The lower torque settings are used for weaker or smaller screws. The weaker and smaller the screw the lower the torque setting.

For screwing pull the trigger

- Start with a slight pressure of the trigger to elicit a slow motion of the bit and low torque
- Apply additional pressure to the trigger to make faster rotation and more driving/drilling/fastening force

In the case of reverse driving and loosening, the same method is employed. For drilling start drilling at a very slow speed. When drilling into hard materials - drill slower.

Important. For very hard materials use coolant to avoid the drill getting too hot. This is very important. Pour a little oil or water on the area that you are drilling. Water is the most common coolant used on drill bits. You will need to use more coolant, if you are drilling into a harder surface. The coolant will keep the drill bit or saw as well as the metal/glass lubricated and cool. The drill can break, if it gets too hot while drilling. Coolant should be applied both before and during drilling.

Driving a screw into hard and dry wood

Hard and dry wood can and will easily split/crack, if a screw is driven in without first drilling a pilot hole .

Determine the appropriate bit size for drilling your pilot hole. As a general rule of thumb, your pilot hole should be slightly smaller than the diameter of your screw. This will remove as much material as possible, which will reduce the likelihood of splitting, but will still leave enough material for the screw's threads to grip into. Drill the hole to a depth equal to the screw's length. Back the bit out carefully.

Install the screw. Once the pilot hole is drilled, you can install the screw. Fit your drill with a screwdriver bit and position the screw's tip into the pilot hole. Drive the screw in, being careful to angle it to follow the path of the hole.

Avoid stripping a screw. The last thing you want to happen, when drilling in a screw, is to strip the screw head. This happens for a number of reasons, like using the wrong driver bit size or applying too little pressure on the screw. Stripping the screw head will ruin the screw, and will make removing a screw that's already been set a much bigger challenge.

For drilling in stone or concrete wall, 'hammer'

To use this method, you need to think that this drill is not specialized to do heavy work, like drilling holes in very strong concrete or in strong foundations, but for simple wall constructions. On the ring with the numbers 1 – 15, exist the indication ´hammer´, turn the ring towards this ´hammer´ position.

For drilling into a wall, you need to use drill bits for stone. These differ from metal and wood drill bits, in having a stronger tip on the head of the drill bit, mostly called 'diamant'.

Important. Do not use too much force on the drill. The drill can become too hot and eventually burn the inside of the drill and destroy it. When it is hard to open a hole in the wall, then start with a smaller sized drill bit, (f.ex. 4mm) then enlarge the hole with a larger drill bit, until you reach the size of the hole you want to make.

Sewing machines and reusable menstrual pads #menstrualpower

In addition to the maintenance workshops, UFF-Humana has started a small project - the production of reusable menstrual pads. Most girls and women in Guinea-Bissau do not have the opportunity to get proper products for their period. Therefore, women use old cloths, which often cause serious health problems. Due to a lack of sanitary products girls also miss school and working days. The idea that bleeding is something shameful or taboo may also encourage girls to avoid social contact during their period.

A course in making reusable menstrual pads was held for groups at the ADPP Teacher Training College in Cacheu and Vocational School in Bissora. In both places, the idea of sewing the reusable pads was highly welcomed. Reusable menstrual pads offer several benefits: better menstrual hygiene, significantly less waste compared to disposable products, and also an opportunity to make money by producing sanitary pads for sale. Girls are using second-hand sewing machines received from Denmark.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